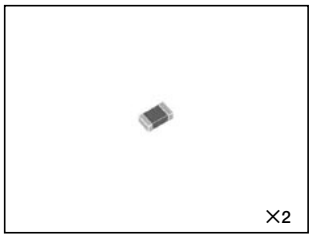
2012(0805)Size chip capacitors : MCH21

- Miniature, high capacitance
- Achieved high capacitance by thin and multi layer technology
- Lead-free plating terminal
- No polarity



■Quick Reference

The design and specifications are subject to change without prior notice. Before ordering or using, please check the latest technical specifications. For more detail information regarding temperature characteristic code and packaging style code, please check product destination.

●Range of thermal compensation capacitors

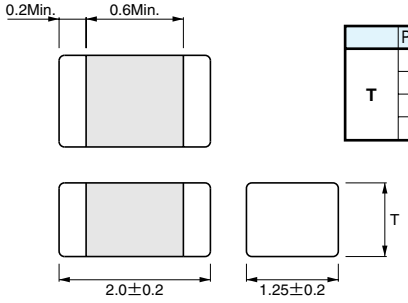
MCH21	Temperature	A,AN(CG)(C0G)(CH) Characteristic			Packing style code
	Rated voltage(V)	50V			
	Product thickness(mm)	0.6±0.10	0.85±0.1	1,25±0.1	
	Capacitance(pF)	2,700～3,300	3,900～5,600	6,800～10,000	
Capacitance tolerance		J(±5%)			K, P
Nominal capacitance series		E12			

●Range of high dielectric constant capacitors

MCH21	Temperature	CN(R)(B)(X7R) Characteristic						CN(X5R) Characteristic		Packing style code
	Rated voltage(V)	50V			25V	16V	10V	10V	6.3V	
	Product thickness(mm)	0.6±0.1	0.85±0.15	1.25±0.2						
	Capacitance(pF)	1,000～47,000	68,000	10,000	150,000～220,000	330,000～1,000,000	1,500,000～2,200,000	3,300,000～4,700,000	10,000,000	
Capacitance tolerance		K(±10%)							M(±20%)	K, P
Nominal capacitance series		E6								

MCH21	Temperature	FN(F)(Y5V) Characteristic			Packing style code
	Rated voltage(V)	50V	16V	10V	
	Product thickness(mm)	0.6±0.1	1,25±0.2		
	Capacitance(pF)	10,000～100,000	1,000,000～4,700,000	10,000,000	
Capacitance tolerance		Z(+80%,−20%)			K, P
Nominal capacitance series		E3			

■External dimensions (Unit : mm)



	Product thickness(mm)
T	0.6±0.1
	0.85±0.1
	1.25±0.1
	1.25±0.2

Code	Prduct thickness	Packing specification	Reel	Basic ordering unit(pcs.)
K	**0.6、0.85mm**	Paper tape(width 8mm, pitch 4mm)	φ180mm(7in.)	4,000
P	**1.25mm**	Pulastic tape(width 8mm, pitch 4mm)	φ180mm(7in.)	2,000

Reel(φ180mm):compatible with EIAJ ET-7200A

■Production designation

Part No. / Packing Style

M	C	H	2	1	3	F	N	1	0	5	Z	K

Rated voltage

Code	Voltage
8	6.3V
4	10V
3	16V
2	25V
5	50V

Capacitance-temperature characteristics				Nominal capacitance	Capacitance tolerance	
Code	EIA code	Operating temp. range(℃)	Temp. coefficient or percent change		Code	Tolerance
A,AN	CG(C0G)	−55～+125	0±30ppm／℃	3-digit designation accordijg to IEC	J	±5%(11pF or more)
	CH	−55～+125	0±60ppm／℃			
CN	R	−55～+125	±15%		K	±10%
	B	−25～+ 85	±10%			
	(X5R)	(−55～+ 85)	(±15%)		M	±20%
	(X7R)	(−55～+125)	(±15%)			
FN	F	−25～+ 85	+30%, −80%		Z	+80%, −20%
	(Y5V)	(−30～+ 85)	(+22%, −82%)			

■Product No. list

●Thermal compensation capacitors

Capacitance (pF)	Temperature		A・AN(CG)(COG)(CH)Characteristic
	Rated voltage(V)		25V
	Tolerance	Product thickness(mm)	Product No.
2,700	J(±5%)	0.6±0.1	MCH215A(AN)272JK
3,300			MCH215A(AN)332JK
3,900		0.85±0.1	MCH215A(AN)392JK
4,700			MCH215A(AN)472JK
5,600			MCH215A(AN)562JK
6,800		1.25±0.1	MCH215A(AN)682JP
8,200			MCH215A(AN)822JP
10,000			MCH215A(AN)103JP

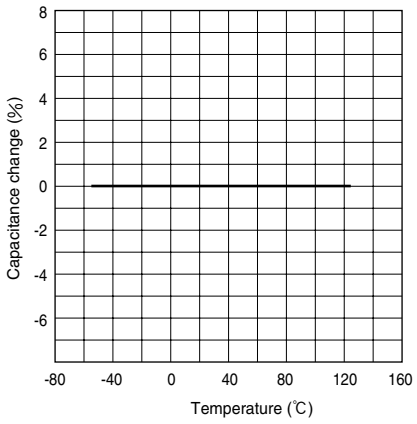
●High dielectric constant capacitors

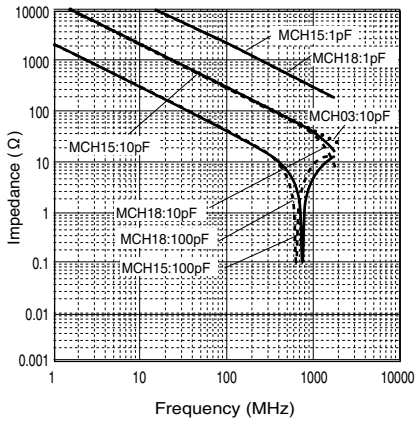
Capacitance (pF)	Temperature		CN(R)(B)(X7R)Characteristic				CN(X5R)Characteristic	
	Rated voltage(V)		50V	25V	16V	10V	10V	6.3V
	Tolerance	Product thickness(mm)	Product No.	Product No.	Product No.	Product No.	Product No.	Product No.
1,000	K(±10%)	0.6±0.1	MCH215CN102KK					
1,500			MCH215CN152KK					
2,200			MCH215CN222KK					
3,300			MCH215CN332KK					
4,700			MCH215CN472KK					
6,800			MCH215CN682KK					
10,000			MCH215CN103KK					
15,000			MCH215CN153KK					
22,000			MCH215CN223KK					
33,000			MCH215CN333KK					
47,000			MCH215CN473KK					
68,000		0.85±0.15	MCH215CN683KK					
100,000		1.25±0.2	MCH215CN104KP					
150,000				MCH212CN154KP				
220,000				MCH212CN224KP				
330,000					MCH213CN334KP			
470,000					MCH213CN474KP			
680,000					MCH213CN684KP			
1,000,000					MCH213CN105KP			
1,500,000						MCH214CN155KP		
2,200,000						MCH214CN225KP		
3,300,000							MCH214CN335KP	
4,700,000							MCH214CN475KP	
10,000,000	M(±20%)							MCH218CN106MP

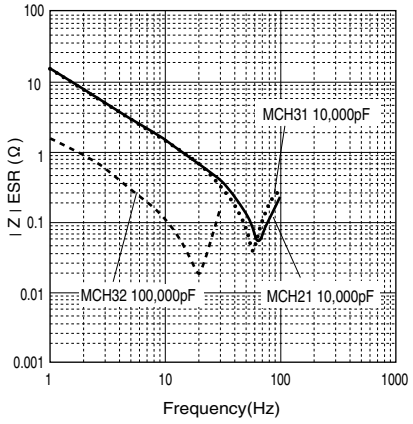
Capacitance (pF)	Temperature		FN(F)(Y5V)Characteristic		
	Rated voltage(V)		50V	16V	10V
	Tolerance	Product thickness(mm)	Product No.	Product No.	Product No.
10,000	Z(+80%, −20%)	0.6±0.1	MCH215FN103ZK		
22,000			MCH215FN223ZK		
47,000			MCH215FN473ZK		
100,000			MCH215FN104ZK		
1,000,000		1.25±0.2		MCH213FN105ZP	
2,200,000				MCH213FN225ZP	
4,700,000				MCH213FN475ZP	
10,000,000					MCH214FN106ZP

■Characteristics

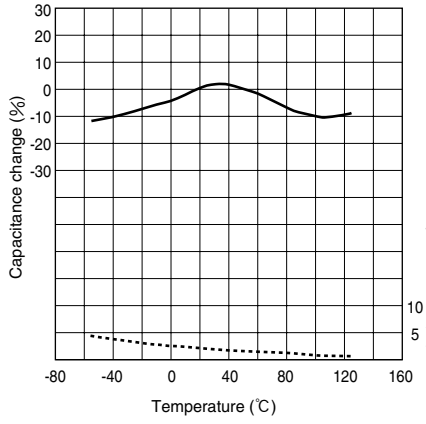
●A(CG)(C0G)(CH)Characteristics

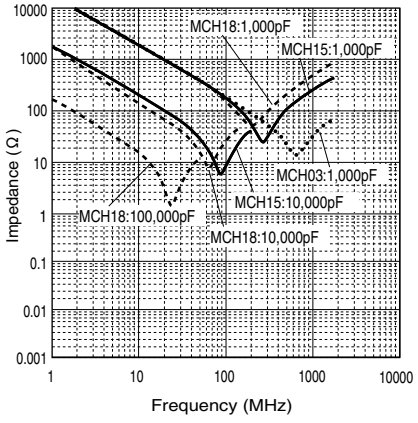


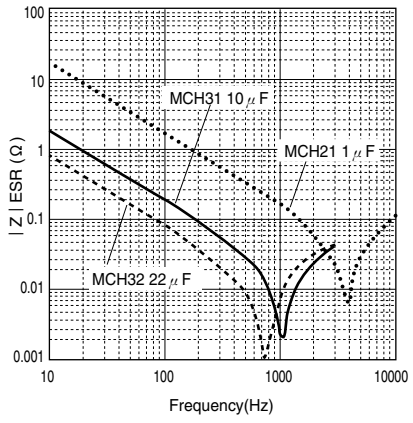




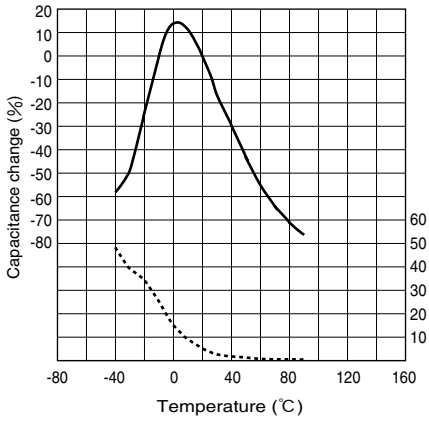
●CN(R)(B)(X5R)(X7R)Characteristics

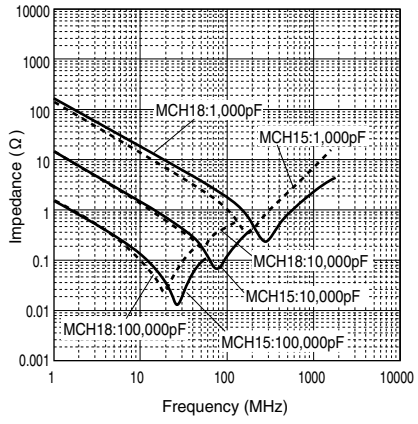


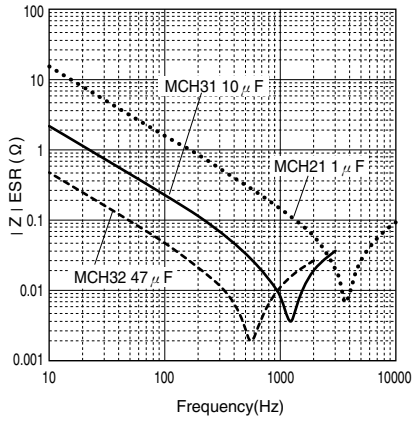




● FN(F)(Y5V)Characteristics



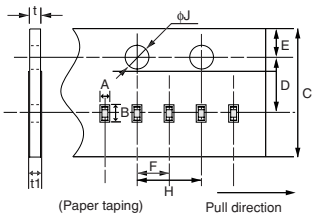




■Packing specification

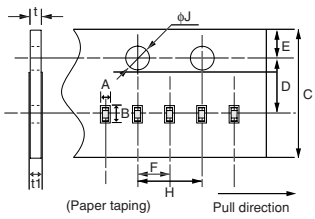
●Carrier tape dimensions (Unit:mm)

MCH03



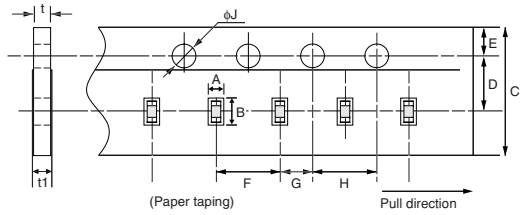
Code	A	B	C	D	E	F	H	J	t	t1
MCH03	0.37 ±0.03	0.67 ±0.03	8.0 ±0.2	3.5 ±0.05	1.75 ±0.1	2.0 ±0.05	4.0 ±0.1	ϕ1.5 +0.1 0	0.42 ±0.02	0.5 MAX

MCH15



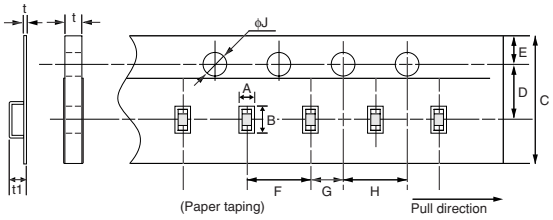
Code	A	B	C	D	E	F	H	J	t	t1
MCH15	0.65 ±0.05	1.15 ±0.05	8.0 ±0.2	3.5 ±0.05	1.75 ±0.1	2.0 ±0.05	4.0 ±0.1	ϕ1.5 +0.1 0	0.7 ±0.05	0.8 MAX

MCH18



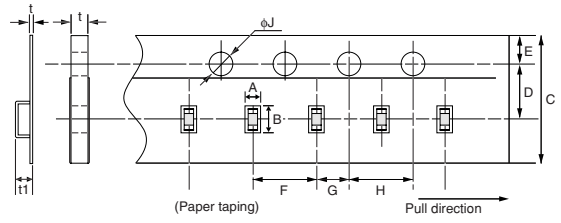
Code	A	B	C	D	E	F	G	H	J	t	t1
MCH18	1.0 ±0.05	1.8 ±0.05	8.0 ±0.3	3.5 ±0.05	1.75 ±0.1	4.0 ±0.1	2.0 ±0.05	4.0 ±0.1	ϕ1.5 +0.1 0	1.05 MAX.	1.2 MAX.

MCH21



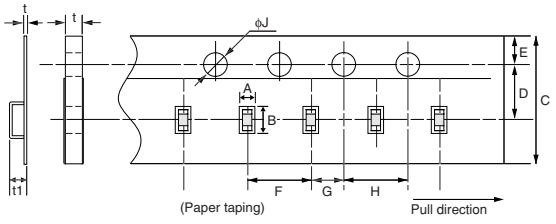
Code	A	B	C	D	E	F	G	H	J	t	t	t1
										Paper	Pulastic	
MCH21	1.5 ±0.2	2.3 ±0.2	8.0 ±0.3	3.5 ±0.05	1.75 ±0.1	4.0 ±0.1	2.0 ±0.05	4.0 ±0.1	ϕ1.5 +0.1 0	1.1 MAX.	0.3 MAX.	2.5 MAX.

MCH31



Code	A	B	C	D	E	F	G	H	J	t	t	t1
										Paper	Pulastic	
MCH31	1.9 ±0.2	3.5 ±0.2	8.0 ±0.3	3.5 ±0.05	1.75 ±0.1	4.0 ±0.1	2.0 ±0.05	4.0 ±0.1	ϕ1.5 +0.1 0	1.1 MAX.	0.3 MAX.	2.5 MAX.

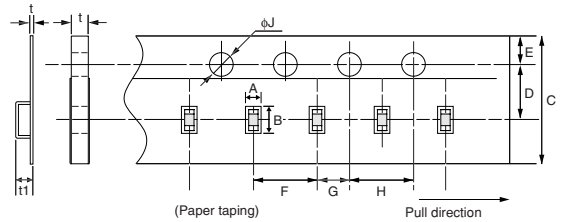
MCH32



Code	A	B	C	D	E	F	G	H	J	t	t1
										Pulastic	
MCH32	2.9	3.6	8.0±0.3 (12.0±0.3)	3.5±0.05 (5.0±0.03)	1.75 ±0.1	4.0 ±0.1	2.0 ±0.05	4.0 ±0.1	ϕ1.5 +0.1 0	0.6 MAX.	2.5MAX. (6.5MAX.)

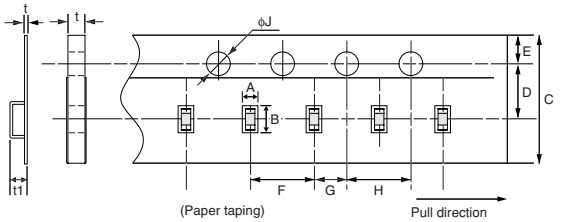
（）内は製品厚みの2.5mmに適用

MCH43



Code	A	B	C	D	E	F	G	H	J	t	t1
										Pulastic	
MCH43	3.6	4.9	12.0 ±0.3	5.5 ±0.05	1.75 ±0.1	8.0 ±0.1	2.0 ±0.05	4.0 ±0.1	ϕ1.5 +0.1 0	0.6 MAX.	6.5 MAX.

MCH55

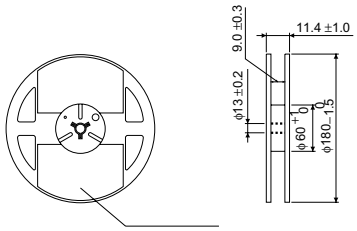


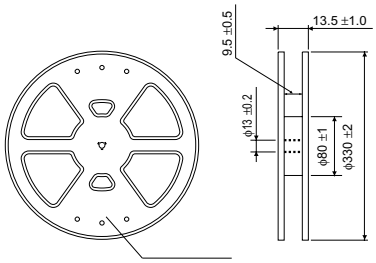
Code	A	B	C	D	E	F	G	H	J	t	t1
										Pulastic	
MCH55	5.4	6.1	12.0 ±0.3	5.5 ±0.05	1.75 ±0.1	8.0 ±0.1	2.0 ±0.05	4.0 ±0.1	ϕ1.5 +0.1 0	0.6 MAX.	6.5 MAX.

■Packing specification

●Reel dimensions (Unit:mm)

ϕ180mm Plastic reel	ϕ330mm Plastic reel
MCH03 MCH15 MCH18 MCH21 MCH31 MCH32 MCH43 MCH55	MCH15 MCH18

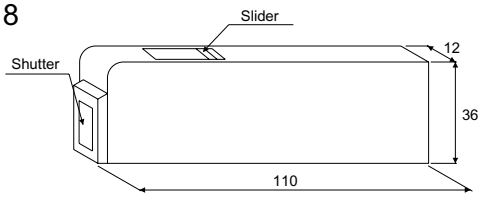




●Bulk case dimensions (Unit:mm)

EIAJ ET-7201A compliant

MCH15
MCH18



●For fundamental considerations on capacitors, refe to Electric Industries Association of Japan, technical report, "EIAJ RCR-2333,Guideline of notabilia for fixed multilayer ceramic capacitors for use in electronic equipment".

●The contents described herein are correct as of Sep, 2003.

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